

Appendix A

Traffic Analysis Report Summary

M-15 DEIS Traffic Analysis Report Summary

The Traffic Analysis Report, provided under separate cover, is a companion document to the Draft Environmental Impact Statement (DEIS) prepared for the M-15 project between I-75 and I-69 in Oakland and Genesee counties. The three main purposes of the analysis are to:

- Determine the existing (1998) traffic conditions along M-15;
- Estimate the traffic performance of M-15 in 2025 for several alternatives; and,
- Evaluate possible changes in land uses along the corridor that might affect the use of M-15.

Existing conditions were analyzed first to serve as the baseline for comparisons. The capability of M-15 to handle 2025 traffic in view of its present configuration of a two-lane facility (“No Action” scenario) was analyzed next. Additionally, nine other scenarios that consider improvements in the M-15 corridor were evaluated. These scenarios are listed below:

**Table A-1
M-15 Alternatives**

Year 2025 Alternatives	Description
Baseline	No Action
Alternative No. 1	TSM plus Pave Gravel Roads
Alternative No. 2A	Improve Irish Road to Boulevard
Alternative No. 2A + SLAM	Improve Irish Road plus Land Use Reallocation
Alternative No. 2B	Build Goodrich Bypass
Alternative No. 2C	Build Lake Louise Bypass
Alternative No. 3	Widen M-15
Alternative No. 4 ¹	Improve Hadley/Washburn Roads
Alternative No. 5 ¹	Control Atlas Township Growth
Alternative No. 6 ¹	Combine Alternatives 4 and 5

¹Alternatives analyzed late in the study in response to public input.

In addition, mass transit and other non-automobile modes/options (e.g., telecommuting, demand management, etc.) were considered from the standpoint of the maximum potential diversion from personal vehicles that might be achieved. Today, no such transit system approach is evident. And, even under the most favorable conditions it is unlikely that more than five percent of the travel on M-15 could be diverted from the auto. This diversion would not affect the need for more lanes on M-15. Therefore, the non-auto alternative was not considered a viable option and was not the focus of additional analysis.

Traffic volume projections for the scenarios listed above are obtained by using SEMCOG’s travel model. It covers a seven-county region that includes Oakland County, but not Genesee. The SEMCOG model was “extended” into Genesee County by using the zonal structure and data from the Flint area model. Traffic volumes along M-15 provided by the model, along with the current (1998) volumes, are listed on Table A-2. A brief analysis of the data contained in Table A-2 is provided next.

At the outset it is important to set standards by which to measure the effectiveness of the alternatives. The Transportation Research Board (Special Report 209) recommends “level of service” as the measure of traffic performance. Levels of service range from free-flow conditions with insignificant delays (LOS A) to extremely congested conditions with large delays and low

speeds (LOS F). The latter condition indicates the most a two-lane road can handle in an M-15 environment (more rural than urban) is 15,600 vehicles per day (vpd). However, transportation agencies strive for LOS C or a maximum volume of 14,400 vpd on a two lane road in a rural setting.

Existing (1998) Conditions

Traffic volumes reported for 1998 indicate that, with the exception of its southern segments, M-15 currently operates adequately. Between Groveland Road and I-75, however, M-15's performance is below the desirable LOS C (i.e., daily volumes greater than 14,400).

Year 2025 Conditions

M-15 in the study area needs capacity-enhancing improvements to be able to accommodate the expected traffic in year 2025 and still provide adequate performance. In particular, a widening to at least four through lanes will be needed if traffic cannot be diverted to other arteries.

Of the alternatives that do not call for widening M-15 (Nos. 2A, 2B, 2C, 4, 5 and 6), all have a positive but limited effect on reducing traffic on M-15. But, overall, the relief of any alternative is not enough to reduce forecast traffic along M-15 so that widening is not needed. Even if the expected growth in the area were shifted to the north of the corridor from Oakland County (Alternative No. 2A), or the expected growth in Atlas Township were held to just 25 percent of what was forecast originally by local planners (Alternative No. 5), widening M-15 is still needed. That improvement (Alternative No. 3) would include four through lanes plus a fifth for turning vehicles in a configuration of simply an all-paved five-lane road to a boulevard which includes a landscaped median. It can provide daily capacity of more than 30,000 vpd. This will handle the 2025 forecast on M-15.

Intersection Analysis

To further examine the need to improve M-15, an analysis of the performance of each of 28 intersections was conducted. The results indicate that currently, nine intersections along M-15 are operating lower than LOS C (Table A-3). Six of those intersections appear to warrant a traffic signal to handle 2025 traffic even if M-15 were not widened. But, even if those signals were installed, 15 of the 28 intersections would operate in 2025 at lower than LOS C; 12 would be at LOS E or F. However, if M-15 were widened, not one intersection would operate lower than LOS C.

Again, the need to widen M-15 is key to addressing the travel demand forecast by 2025. Widening in most sections to a narrow boulevard and to five-lanes in other sections is the approach preferred by the consultant.

**Table A-2
Additional 2025 Traffic Projections**

Location	1998 Existing	2025 Scenarios									
		No Action	Alt. No. 1	Alt. No. 2A	Alt. No. 2A plus SLAM	Alt. No. 2B	Alt. No. 2C	Alt. No. 3	Alt. No. 4*	Alt. No. 5*	Alt. No. 6*
I-69	12,400	21,000	21,700	19,800	21,100	21,000	21,000	21,800	19,000	19,300	17,400
Atherton Road	12,600	20,800	20,800	18,500	18,000	20,800	20,800	21,400	19,400	19,600	18,300
Maple Road	10,900	19,700	19,300	16,400	16,300	19,700	19,700	20,100	18,900	18,900	18,100
Perry Road	11,300	18,400	18,000	13,000	12,800	14,900	18,400	18,800	17,700	17,600	16,900
Hegel Road	12,100	18,500	18,300	15,800	14,400	15,000	18,500	20,200	17,500	18,000	17,000
Horton Road	12,500	18,600	18,600	18,600	16,000	18,600	18,600	20,700	17,300	18,400	17,100
Groveland Road	17,000	21,900	21,900	21,900	18,600	21,900	17,000	22,900	21,200	21,700	21,100
Seymour Lake Road	19,000	25,100	25,100	25,100	21,100	25,100	25,100	25,100	25,100	25,000	25,000
Rattalee Lake Road	27,300	35,200	35,100	35,200	29,500	35,200	35,200	35,200	35,200	35,100	35,100
I-75											

Source: The Corradino Group

Alternative 1TSM Improvements plus pave local roads

Alternative 2AImprove Irish Road

Alternative 2A plus SLAMImprove Irish Road plus Land Use Reallocation proposed by the Simplified Land Allocation Model

Alternative 2B.....Build Goodrich Bypass

Alternative 2C.....Build Lake Louise Bypass

Alternative 3Widen M-15 to four lanes for through travel

Alternative 4Pave Hadley Road from Rattalee Lake to Sawmill Lake Roads

Alternative 5No Action, plus limit 1995-2025 trip growth in Atlas Township to 25 percent

Alternative 6.....Alternative 4 and 5

*Alternative analyzed late in the study in response to public input.

**Table A-3
M-15 Intersection Traffic Analysis**

Growth Rates		M-15			Cross Road	Level of Service		
No Action	Improve M-15	Proposed Condition	Existing Signalization	2025 Potential Signalization		Existing Level of Service	No-Action w/2025 Traffic	Improved M-15 w/2025 Traffic
1.69	1.76	5-lane	Signal	Signal	Lippincott	B	C	A
1.69	1.76	5-lane	None	Signal	Atherton	F	A	A
1.69	1.76	5-lane	Flasher	Signal	Bristol	F	D	A
1.65	1.70	5-lane	None	None	Maple	C	F	B
1.65	1.70	Boulevard	None	Signal	Hill	C	B	C
1.81	1.84	Boulevard	None	Signal	Perry	C	B	B
1.81	1.84	Boulevard	None	None	Coolidge	C	E	B
1.63	1.66	5-lane	Flasher	Signal	East Hegel	D	B	A
1.63	1.66	5-lane	Signal	Signal	West Hegel	B	C	A
1.53	1.67	5-lane	None	None	Green	D	F	A
1.53	1.67	Boulevard	None	None	Kipp	B	C	B
1.49	1.66	Boulevard	None	None	County Line	C	D	B
1.49	1.66	Boulevard	None	None	Groveland	B	D	B
1.49	1.66	Boulevard	None	Signal	Oakwood	F	C	B
1.29	1.35	Boulevard	Signal	Signal	Mill	B	B	B
1.29	1.35	Boulevard	Signal	Signal	South	B	C	A
1.29	1.35	Boulevard	Signal	Signal	Granger/Kent	A	B	A
1.29	1.35	Boulevard	None	None	Wolfe	C	E	B
1.29	1.35	Boulevard	Signal	Signal	Brandon High School En.	A	B	B
1.29	1.35	5-lane	Signal	Signal	Glass	B	F	A
1.29	1.35	5-lane	Signal	Signal	Seymour Lake	C	E	C
1.32	1.32	Boulevard	None	None	Oak Hill	F	F	C
1.32	1.32	Boulevard	None	None	Hadley/Ratalee Lake	F	F	B
1.32	1.32	Boulevard	Signal	Signal	Hubbard	B	E	B
1.29	1.29	Boulevard	Signal	Signal	Deer Ridge	C	E	B
1.29	1.29	5-lane	None	None	Berry Point	E	F	A
1.29	1.29	5-lane	Signal	Signal	Cranberry Lake	B	B	A
1.29	1.29	5-lane	None	None	Amy	F	F	B